



National Education Society (R)

**JAWAHARLAL NEHRU
NATIONAL COLLEGE OF ENGINEERING, SHIMOGA**

MECHANICAL ENGINEERING

Research Laboratories:

The department has got the following research laboratories, where research activities are continuously carried out.

1. Biofuel Research, Information and Demonstration Centre (BRIDC)

The research and developmental activities in the area of Bio energy in our department started in the year 2004 with a grant of Rs.23.40 lakhs by AICTE and MNRE. Later, in the year 2011, Karnataka state Bio energy development Board sanctioned fund to start Biofuel Research, Information and Demonstration Centre (BRIDC). The total grant received from KSBDB so far is Rs.56.04 lakhs. This research and information centre has been conceptualized as a showcase to study, promote and demonstrate all aspects related to Bio-fuel. Some of the important research activities carried out are;

- a) Performance testing of biomass gasifier for power production using blends of wood and agro waste(Funded by AICTE and MNRE in the year 2004, Rs.23.4 lakhs)
- b) Field trail testing of diesel engine with straight vegetable oil blended with petrol as a fuel (Funded by KSCST, Rs.1.5 lakhs)
- c) Design and fabrication of Biofuel seeds decorticator (Funded by KSBDB, Rs.72000)
- d) Estimation of percentage of tannin content in areca nut grown at Shimoga region (Funded by MAMCOS, Rs.14000)
- e) Extraction of arecoline content from areca nut (Funded by MAMCOS, Rs.15000)
- f) “Improvisation methodology of biodiesel production and byproduct value addition”
- g) “Design and development of Phyto-Remediation System for treating Sewage water” (Funded by JNNCE, Rs.3.5 lakhs).

Further, the centre has created research facilities for M.Tech., B.E., B.Sc., M.Sc., and B.Ed., students to take up research projects on various aspects of Bio-fuel and environment. Also the research laboratory facility is provided for other institutions.

The research centre has following major equipments and systems.

- a) Oil expeller
- b) Trans-esterification reactor unit with dry tanks
- c) Seed cleaner and decorticator
- d) Filter press
- e) Digital moisture oven
- f) Pensky-Martin flash point equipment

- g) Viscometer bath with viscometer
- h) Copper corrosion testing equipment
- i) Diesel engine
- j) Portable oil purifier
- k) Kitchen waste biogas plant (2 units)
- l) Biomass gasifier with gas engine
- m) Weighing scale
- n) Solar water heater